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10/062,113	02/01/2002	Jeffrey J. Collins	435	9992

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EXAMINER	
DAGOSTA, STEPHEN M	
ART UNIT	**PAPER NUMBER**
2683	

DATE MAILED: 08/15/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/062,113	COLLINS, JEFFREY J.	
	Examiner	Art Unit	
	Stephen M. D'Agosta	2683	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *01 August 2005*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1,3-11,14-16,18,19 and 21-24* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1, 3-11, 14-16, 18-19 and 21-24* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Response to Amendment

The primary examiner has reviewed the June amendment per the RCE.

1. He has found new prior art which he believes reads on the claimed limitations.

2. He has added a USC 112 rejection.

3. After further review, he believes the following amendment(s) would place the claims in condition for allowance:

a. Amend claim 1 with claim 5, 7, 8 and 14.

b. Amend claim 1 with claim 3, 11 and 14.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

The term "at least some" in claim 1 is a relative term which renders the claim indefinite. The term "at least some" is not defined by the claim, the specification does not provide a standard for ascertaining the requisite degree, and one of ordinary skill in the art would not be reasonably apprised of the scope of the invention. The term “at least some” appears twice in claim 1 and should be modified to reflect either a definite amount and/or a range regarding how much interference prevention is provided.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 1, 3-6, 10-11, 14, 16-19 and 21-24 rejected under 35 U.S.C. 103(a) as being unpatentable over Clupper et al. US 6,309,742 and further in view of Allen et al. US 6,410,847 and Webb US 6,542,371 and Eckblad et al. US 6,390,475.

As per **claim 1**, Clupper teaches a low RF emissions network device (abstract and C1, L1-22) comprising:

A chassis (C1, L23-39 teaches an enclosure, access panels, doors, lids and/or C2, L9-10 teaches a housing); and

A network device component disposed in said chassis, said components emitting electromagnetic interference (C1, L66 to C2, L10),

A layer of foam, having a high insertion loss in the frequency range of EMI, disposed on at least a portion of a surface of said network device (C3, L46 to C4, L17 which teaches a foam substrate with metal coating that can be attached to a device and is used a gasket/EMI shield);

But is silent on the laver of foam substantially covering the inner surface of the Chassis and Wherein said foam being disposed in proximity to at least one of said electromagnetic-generating network device components (,

Wherein said foam absorbs electromagnetic interference and prevents at least some of the interference from exiting said chassis and prevents at least some of the interference from interfering with said network device

Said network device components comprising at least one integrated circuit emitting electromagnetic interference, said integrated circuit having a heat sink, wherein said foam is disposed on top of said heat sink.

Allen teaches a packaged electronic system with an absorbing cover to reduce EMI (title, abstract, figures 2-3, C3, L4-24). Hence one skilled would either manufacture the cover to have these properties or at least use EMI shielding material to shroud the cover (eg. with a material as disclosed by Clupper).

Both Webb and Eckblad teach EMI suppressive methods whereby material is placed "near" a neat sink, which reads on the foam being disposed on top of said heat sink. Specifically Webb teaches:

" ...a heat sink is mechanically coupled to the heat producing component during operation. Typically, a flat surface of the heat sink will be held against a flat surface of the electrical component using some form of clamp or fastener. As can be appreciated, the surface of the heat sink and the surface of the component will rarely be perfectly planar or smooth, so air gaps will generally exist between the surfaces…." (C1, L44-51)

"…In yet another embodiment, carbon fiber threads are interlaced within a metallic lattice (formed from, for example, thin copper strands) to form the support structure of the pad. Such hybrid fabrics may also be used to provide shielding for electromagnetic interference (EMI) if the corresponding thermal pad is shaped to enclose the circuit package (e.g., an integrated circuit package). Preferably, the carbon fiber fabric will consist of 50% or more of carbon fiber by weight (although smaller ratios are also possible). As will be appreciated by a person of ordinary skill in the art, many alternative hybrid fabric combinations also exist…" (C5, L36-50).

Eckblad teaches (see figure 1):

"....wherein said gasket and said heat sink, in combination with a ground ring in said substrate surface, provide a barrier surrounding-said exposed die to eliminate electromagnetic interference emissions from said exposed die…." (C6,L17-22).

It would have been obvious to one of ordinary skill in the art at the time of applicant's invention to modify Clupper, such that the layer of foam substantially covers the inner surface of the chassis Wherein said foam being disposed in proximity to at least one of said electromagnetic-generating network device components, wherein said foam absorbs electromagnetic interference and prevents at least some of the interference from exiting said chassis and prevents at least some of the interference from interfering with said network device, Said network device components comprising at least one integrated circuit emitting electromagnetic interference, said integrated circuit having a heat sink, wherein said foam is disposed on top of said heat sink, to provide maximum EMI protection against any leakage via the chassis and/or openings of said chassis.

As per **claim 3**, Clupper teaches claim 1 wherein the network device component includes electronic components (C1, L10 to C2, L27 teaches electronic components such as PCB's, pagers, cell phones, laptops and wireless LANs that are comprised of electronic components and require EMI shielding).

As per **claim 4**, Clupper teaches claim 1 wherein said device is a network device operating in the 1-3GHz range (C1, L10 to C2, L27 teaches electronic components such as PCB's, pagers, cell phones, laptops and wireless LANs that are comprised of electronic components and can operate in the 1-10GHz range) **but is silent on** a range of 3-10GHz.

The examiner notes that Clupper discloses known EMI/RFI shielding gaskets with "....sufficient electrical conductivity.....to provide excellent EMI shielding in a frequency range from about 10MHz to about 26GHz, while being compatible with the use of lightweight plastic shields, snap features, and thin PCB's". Hence the examiner interprets the disclosure as providing motivation for one skilled to dope the foam to increase Clupper's EMI effectiveness up to the 10GHz range and beyond.

It would have been obvious to one of ordinary skill in the art at the time of applicant's invention to modify Clupper, such that the device operates in the 1-10GHz range, to provide EMI shielding for electrical components that operate over a wide range of frequencies.

As per **claim 5**, Clupper teaches claim 1 wherein said foam is doped to increase the insertion loss of said foam in the 1-3GHz range (see figure 8 which shows EMI shielding effectiveness of the doped foam to 3 GHz) **but is silent on** from 3-10 GHz.

The examiner notes that Clupper discloses known EMI/RFI shielding gaskets with "....sufficient electrical conductivity.....to provide excellent EMI shielding in a frequency range from about 10MHz to about 26GHz, while being compatible with the use of lightweight plastic shields, snap features, and thin PCB's". Hence the examiner interprets the disclosure as providing motivation for one skilled to dope the foam to increase Clupper's EMI effectiveness up to the 10GHz range and beyond.

It would have been obvious to one of ordinary skill in the art at the time of applicant's invention to modify Clupper, such that the insertion loss of the foam extends from 1-10GHz, to provide EMI shielding for electrical components that operate over a wide range of frequencies.

As per **claim 6**, Clupper teaches claim 1 wherein said chassis further comprising a door, wherein said foam is provided at least on a portion of said door of said chassis (C1, L34-40 teaches doors, access panels and/or lids of an enclosure/chassis).

As per **claim 10**, Clupper teaches claim 3 wherein said electronic components comprising at least one integrated circuit, **but is silent on** wherein said foam is provided at least on top of said integrated circuit.

Clupper does teach using the foam around/near a PCB and/or circuit (C2, L3-27) which the examiner broadly interprets as being at least on top of said integrated circuit. While Clupper teaches a primary use as a "gasket", one skilled can adapt/cut the foam into a strip and place it above/below/around any electronic component to shield it's EMI radiations.

It would have been obvious to one of ordinary skill in the art at the time of applicant's invention to modify Clupper, such that said foam is provided at least on top

of said integrated circuit, to provide means for wrapping the circuit with EMI shielding foam (along with using the foam as a gasket in a chassis).

As per **claim 11**, Clupper teaches claim 3 wherein said electronic components /PCB's comprising at least one integrated circuit (C1, L22-40) **but is silent on** running at a clock speed of 1-10GHz, wherein said foam is provided at least on top of said integrated circuit running at a clock speed of 1-10 GHz.

Firstly, the examiner notes that Clupper's invention provides EMI shielding up to 3GHz (see figure 8) and also discloses known EMI/RFI shielding gaskets with "....sufficient electrical conductivity.....to provide excellent EMI shielding in a frequency range from about 10MHz to about 26GHz, while being compatible with the use of lightweight plastic shields, snap features, and thin PCB's". Hence the examiner interprets the disclosure as providing motivation for one skilled to dope the foam to increase Clupper's EMI effectiveness up to the 10GHz range and beyond.

Secondly, Clupper does teach using the foam around/near a PCB and/or circuit (C2, L3-27) which the examiner broadly interprets as being at least on top of said integrated circuit. While Clupper teaches a primary use as a "gasket", one skilled can adapt/cut the foam into a strip and place it above/below/around any electronic component to shield it's EMI radiations.

It would have been obvious to one of ordinary skill in the art at the time of applicant's invention to modify Clupper, such that the circuit runs at a clock speed of 1-10GHz, wherein said foam is provided at least on top of said integrated circuit running at a clock speed of 1-10 GHz, to provide EMI shielding for electrical components that operate over a wide range of frequencies.

As per **claim 14**, Clupper teaches claim 1 **but is silent on** wherein said layer of foam is approximately .25 inches in thickness.

Clupper teaches a foam thickness of 3mm which is interpreted as reading on "approximately .25 inches" (eg. the thickness is variable).
It would have been obvious to one of ordinary skill in the art at the time of applicant's invention to modify Clupper, such that the foam is approximately .25 inches, to provide means for the foam to be used as a gasket/covering in many different spaces with varying thicknesses.

As per **claim 16**, Clupper teaches claim 1 wherein said chassis further comprises a door (C1, L22-40 teaches enclosure/chassis doors, access panels or lids), said foam being disposed in a first location on at least a portion of said door of said chassis (C2, L10-15 teaches gasket for sealing slots/gaps), wherein said foam in said first location absorbs EMI and prevents at least some of the interference from exiting said chassis (C2, L15-17 teaches EMI escaping if foam gasket is not used – the examiner notes that Clupper does not limit how the gasket is placed , so it is interpreted that it can be placed anywhere, eg. between door gaps, on the door, around the door, above/below the door, etc.).

As per **claim 18**, Clupper teaches claim 16 wherein said foam being disposed in a second location in proximity to at least one of said EMI-generating network device

components (C1, L40-54 teaches using the foam for EMI shielding to fill in gaps (eg. plural, and interpreted as first/second locations) in a PCB and/or enclosure – the examiner interprets Clupper's foam as being placed around the PCB/circuit and the chassis which are multiple, proximate locations),

Wherein said foam in said second location absorbs EMI and prevents at least some of the interference from exiting said chassis and prevents at least some of the interference from interfering with the network device (C1, L65 to C2, L40 teaches use of foam gasket/shielding to prevent EMI from exiting and/or interfering with network device(s)).

As per **claim 19**, Clupper teaches claim 1 wherein said network device components comprising at least one integrated circuit emitting EMI (C1, L10-65 circuits/PCB's that emit EMI), **but is silent on** wherein said foam is disposed directly on top of said integrated circuit.

While Clupper teaches a primary use as a "gasket", it is obvious that his intention was to provide means for sealing up various spaces and/or a PCB/chassis - hence one skilled can adapt/cut the foam into a strip and place it above/below/around any electronic component to shield it's EMI radiations.

It would have been obvious to one of ordinary skill in the art at the time of applicant's invention to modify Clupper, such that said foam is disposed directly on top of said integrated circuit, to provide means for wrapping the circuit with EMI shielding foam to prevent RFI/EMI.

As per **claim 21**, Clupper teaches claim 18, said network device components comprising at least one integrated circuit emitting EMI (C1, L10-65 circuits/PCB's that emit EMI), **but is silent on** wherein said second location is directly on top of said integrated circuit.

While Clupper teaches a primary use as a "gasket", it is obvious that his intention was to provide means for sealing up various spaces and/or a PCB/chassis - hence one skilled can adapt/cut the foam into a strip and place it above/below/around any electronic component to shield it's EMI radiations.

It would have been obvious to one of ordinary skill in the art at the time of applicant's invention to modify Clupper, such that said foam is disposed directly on top of said integrated circuit, to provide means for wrapping the circuit with EMI shielding foam to prevent RFI/EMI.

As per **claim 22**, Clupper teaches claim 18 wherein said electronic components comprising at least one integrated circuit (C1, L22-40) **but is silent on** including a heat sink, wherein said foam is provided at least on top of said heat sink of said integrated circuit.

The examiner takes ***Official Notice*** that heat sinks are well known in the integrated circuits and provide means of drawing away heat from a chip(s) in order to maintain an optimal operating temperature. Hence, one skilled would still use Clupper's EMI foam shield on a chip/PCB having a heat sink since said heat sink provides no EMI

protection. Clupper does teach using the foam around/near a PCB and/or circuit (C2, L3-27) which the examiner broadly interprets as being at least on top of said integrated circuit. While Clupper teaches a primary use as a "gasket", one skilled can adapt/cut the foam into a strip and place it above/below/around any electronic component to shield it's EMI radiations.

It would have been obvious to one of ordinary skill in the art at the time of applicant's invention to modify Clupper, such that it has a heat sink, wherein said foam is provided at least on top of said heat sink of said integrated circuit, to provide means for wrapping the circuit and heat sink with EMI shielding foam to prevent RFI/EMI.

As per **claims 23-24**, Clupper teaches a low EMI emission network device comprising:

A chassis having a door (C1, L23-39 teaches an enclosure, access panels, doors, lids and/or C2, L9-10 teaches a housing);

Electronic components disposed in said chassis, said components including at least one integrated circuit emitting EMI in the range of 1-3 GHZ (C1, L10 to C2, L40 teaches use of PCB's/circuits that emit EMI and are disposed in a housing/chassis); and

A layer of foam having a high insertion loss in the range of 1-3GHz disposed on at least a portion of said door (C3, L46 to C4, L17 which teaches a foam substrate with metal coating that can be attached to a device and is used a gasket/EMI shield, also see figure 8 for 1-3GHz range and C1, L34-40 teaches doors, access panels and/or lids of an enclosure/chassis which would be outfitted with EMI foam); and

Wherein at least a portion of the EMI is absorbed by the foam and prevented from exiting the chassis (C1, L65 to C2, L40 teaches use of foam gasket/shielding to prevent EMI from exiting and/or interfering with network device(s))
but is silent on 3-10GHz range and substantially coverina the inner surface of said door and wherein the foam is disposed directly on top of said heat sink,.

The examiner notes that Clupper discloses known EMI/RFI shielding gaskets with "....sufficient electrical conductivity.....to provide excellent EMI shielding in a frequency range from about 10MHz to about 26GHz, while being compatible with the use of lightweight plastic shields, snap features, and thin PCB's". Hence the examiner interprets the disclosure as providing motivation for one skilled to dope the foam to increase Clupper's EMI effectiveness up to the 10GHz range and beyond.

Allen teaches a packaged electronic system with an absorbing cover to reduce EMI (title, abstract, figures 2-3, C3, L4-24). Hence one skilled would either manufacture the cover to have these properties or at least use EMI shielding material to shroud the cover (eg. with a material as disclosed by Clupper).

Both Webb and Eckblad teach EMI suppressive methods whereby material is placed "near" a neat sink, which reads on the foam being disposed on top of said heat sink. Specifically Webb teaches:

" ...a heat sink is mechanically coupled to the heat producing component during operation. Typically, a flat surface of the heat sink will be held against a flat surface of the

electrical component using some form of clamp or fastener. As can be appreciated, the surface of the heat sink and the surface of the component will rarely be perfectly planar or smooth, so air gaps will generally exist between the surfaces…." (C1, L44-51)

"…In yet another embodiment, carbon fiber threads are interlaced within a metallic lattice (formed from, for example, thin copper strands) to form the support structure of the pad. Such hybrid fabrics may also be used to provide shielding for electromagnetic interference (EMI) if the corresponding thermal pad is shaped to enclose the circuit package (e.g., an integrated circuit package). Preferably, the carbon fiber fabric will consist of 50% or more of carbon fiber by weight (although smaller ratios are also possible). As will be appreciated by a person of ordinary skill in the art, many alternative hybrid fabric combinations also exist…" (C5, L36-50).

Eckblad teaches (see figure 1):

"....wherein said gasket and said heat sink, in combination with a ground ring in said substrate surface, provide a barrier surrounding-said exposed die to eliminate electromagnetic interference emissions from said exposed die…." (C6,L17-22)

It would have been obvious to one of ordinary skill in the art at the time of applicant's invention to modify Clupper, such that the layer of foam substantially covers the inner surface of the chassis and operates in the 1-10GHz range and foam on top of the heat sink, to provide maximum EMI protection against any leakage via the chassis and/or openings of said chassis and to provide EMI shielding for electrical components that operate over a wide range of frequencies.

Claims 7-9 rejected under 35 U.S.C. 103(a) as being unpatentable over Clupper and Allen/Webb/Eckblad and further in view of King et al. US 5,763,824.

As per **claim 7**, Clupper teaches claim 1 **but is silent on** comprising a Faraday cage.

King teaches a LID assembly for shielding electronic components from RFI interferences (title, abstract) that discloses a Faraday cage as being used to surround/enclose electronic components to shield EMI/RFI (C1, L32-47) and an embodiment of the invention whereby foam is used as a substrate (eg. similar to Clupper).

It would have been obvious to one of ordinary skill in the art at the time of applicant's invention to modify Clupper, such that a Faraday cage is used, to provide

means for surrounding the electronic components within a Faraday cage that uses EMI foam to seal any/all edges for optimal EMI shielding.

As per **claim 8**, Clupper in view of King teaches claim 7 **but is silent on** wherein said foam is provided outside of said Faraday cage.

Clupper teaches using the foam to seal/block leaks from doors, access panels and lids (C1, L34-36) but does not elaborate on how the foam must be applied (ie. inside or outside of doors). Hence, one skilled would provide for using the foam on either inside or outside the door depending upon many factors, including which works best, aesthetics, ease of access, amount of space available inside/outside, how much it hampers operation and/or access of/to the device, etc..

It would have been obvious to one of ordinary skill in the art at the time of applicant's invention to modify Clupper in view of King, such that the foam is provided outside of said Faraday cage, to provide optimal EMI shielding should it be determined that foam on the outside of the cage blocks EMI better than inside the cage.

As per **claim 9**, Clupper teaches claim 7 wherein said chassis further comprising a door, wherein said foam is provided at least on a portion of said door of said chassis (C1, L34-40 teaches doors, access panels and/or lids of an enclosure/chassis which would be outfitted with EMI foam) **but is silent on** outside said Faraday cage.

King teaches a LID assembly for shielding electronic components from RFI interferences (title, abstract) that discloses a Faraday cage as being used to surround/enclose electronic components to shield EMI/RFI (C1, L32-47) and an embodiment of the invention whereby foam is used as a substrate (eg. similar to Clupper). Clupper teaches using the foam to seal/block leaks from doors, access panels and lids (C1, L34-36) but does not elaborate on how the foam must be applied (ie. inside or outside of doors). Hence, one skilled would provide for using the foam on either inside or outside the door depending upon many factors, including which works best, aesthetics, ease of access, amount of space available inside/outside, how much it hampers operation and/or access of/to the device, etc..

It would have been obvious to one of ordinary skill in the art at the time of applicant's invention to modify Clupper, such that the foam is provided on said chassis door outside of said Faraday cage, to provide optimal EMI shielding should it be determined that foam on the outside of the cage door blocks EMI better than inside the cage door.

Claim 15 rejected under 35 U.S.C. 103(a) as being unpatentable over Clupper and Allen/Webb/Eckblad and further in view of Yee US 6,113,425.

As per **claim 15**, Clupper teaches claim 1 **but is silent on** wherein said foam is doped with carbon to increase the insertion loss of said foam in the 1-10GHz range.

Yee teaches use of a Faraday cage to reduce EMI for high-speed signals (C2, L55 to C3, L2) and conductive foam shielding that can be made of carbon, copper, copper foam, etc. (C2, L55-67). The examiner interprets Yee's teaching of high-speed signals as being in the range of 1-10GHz – also see the rejection above for claim 4.

It would have been obvious to one of ordinary skill in the art at the time of applicant's invention to modify Clupper, such that said foam is doped with carbon to increase the insertion loss of said foam in the 1-10GHz range, to provide means for using various doping materials to extend EMI protection for devices operating in the range of 1-10GHz.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Stephen M. D'Agosta whose telephone number is 571-272-7862. The examiner can normally be reached on M-F, 8am to 5pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Bill Trost can be reached on 571-272-7872. The fax phone number for the organization where this application or proceeding is assigned is ***571-272-8300***.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Stephen D'Agosta
Primary Examiner
8-8-2005